



**NHRC**  
Naval Health Research Center

Supporting the biomedical and psychological health and performance of the Navy and Marine Corps

# Joint Medical Planning Tool (JMPT)

## Medical Mission Support

### Problem

Medical planners and logisticians lacked a means to assess the adequacy of medical support that was synchronized with military operations. This meant that planners needed the fidelity to examine the effects of different courses of action and alternative medical networks, and the impact on patient outcomes. The capability gap extended from far forward in the battle space to theater hospitalization.

### Solution

Naval Health Research Center (NHRC) developed the Joint Medical Planning Tool (JMPT) to fill this gap. JMPT is a computer-based simulation tool that models patient flow from the point of injury through more definitive care. It supports research, medical systems analysis, operational risk assessment, and field medical services planning. (Patent pending.)

### Results

JMPT is based on empirical data, including over 400 patient conditions and their associated medical treatment tasks, times, consumable supplies, and equipment necessary to accomplish patient care. It includes algorithms that calculate died of wounds due to treatment delay and complications. JMPT spans the spectrum of theater-based levels of care and emulates all Service medical treatment facilities (MTFs) and their respective functional areas, including the number and type of personnel, and the type, speed, and capacity of transportation assets. JMPT uses discrete-event stochastic processes to model patient arrivals, treatments, and outcomes as patients move from the point of injury through the network of MTFs and eventual return to duty or evacuation from theater.

JMPT is fully integrated with the Medical Planners' Toolkit (MPTk). JMPT consists of four functional components: patient stream generation, medical treatment, transportation, and report generation. Users define the scenario by specifying scenario length, MTF laydown, transportation assets, and casualty load. JMPT generates a wide variety of system-defined reports that provide detailed information on casualty generation, care provision, and transportation metrics in both tabular and graphic formats.

This application is one element of an integrated, clinically based, end-to-end medical materiel requirements planning process that incorporates the clinical practice guidelines, the patient encounter and clinical workload forecasts, and the medical materiel data linking them together. This modeling and simulation process enables collaboration by integrating clinical and logistics data, permitting identification of capabilities, operational requirements, patient stream, and material item estimates.

### Benefits

- JMPT is a course-of-action assessment tool specifically designed to assist military medical planners and logisticians to evaluate the medical support mission.
- JMPT helps determine whether a particular MTF meets the needs of a specific patient stream; how the relocation of an MTF affects patient treatment; and how supply, personnel, and transportation assets are used. Further, it facilitates comparisons of proposed care facility networks.
- JMPT is an analysis tool that supports both deliberate and crisis-action planning.
- JMPT is an OASD(HA)-designated planning tool for the U.S. Army, Navy, Marine Corps, and Air Force.

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